

Abstract of the Disclosure

Complementary metal-oxide-semiconductor (CMOS) integrated circuits with bipolar transistors and methods for fabrication are provided. A bipolar transistor may
5 have a lightly-doped base region. To reduce the resistance associated with making electrical contact to the lightly-doped base region, a low-resistance current path into the base region may be provided. The low-resistance current path may be provided by a base
10 conductor formed from heavily-doped epitaxial crystalline semiconductor. Metal-oxide-semiconductor (MOS) transistors with narrow gates may be formed on the same substrate as bipolar transistors. The MOS gates may be formed using a self-aligned process in which a
15 patterned gate conductor layer serves as both an implantation mask and as a gate conductor. A base masking layer that is separate from the patterned gate conductor layer may be used as an implantation mask for defining the lightly-doped base region.